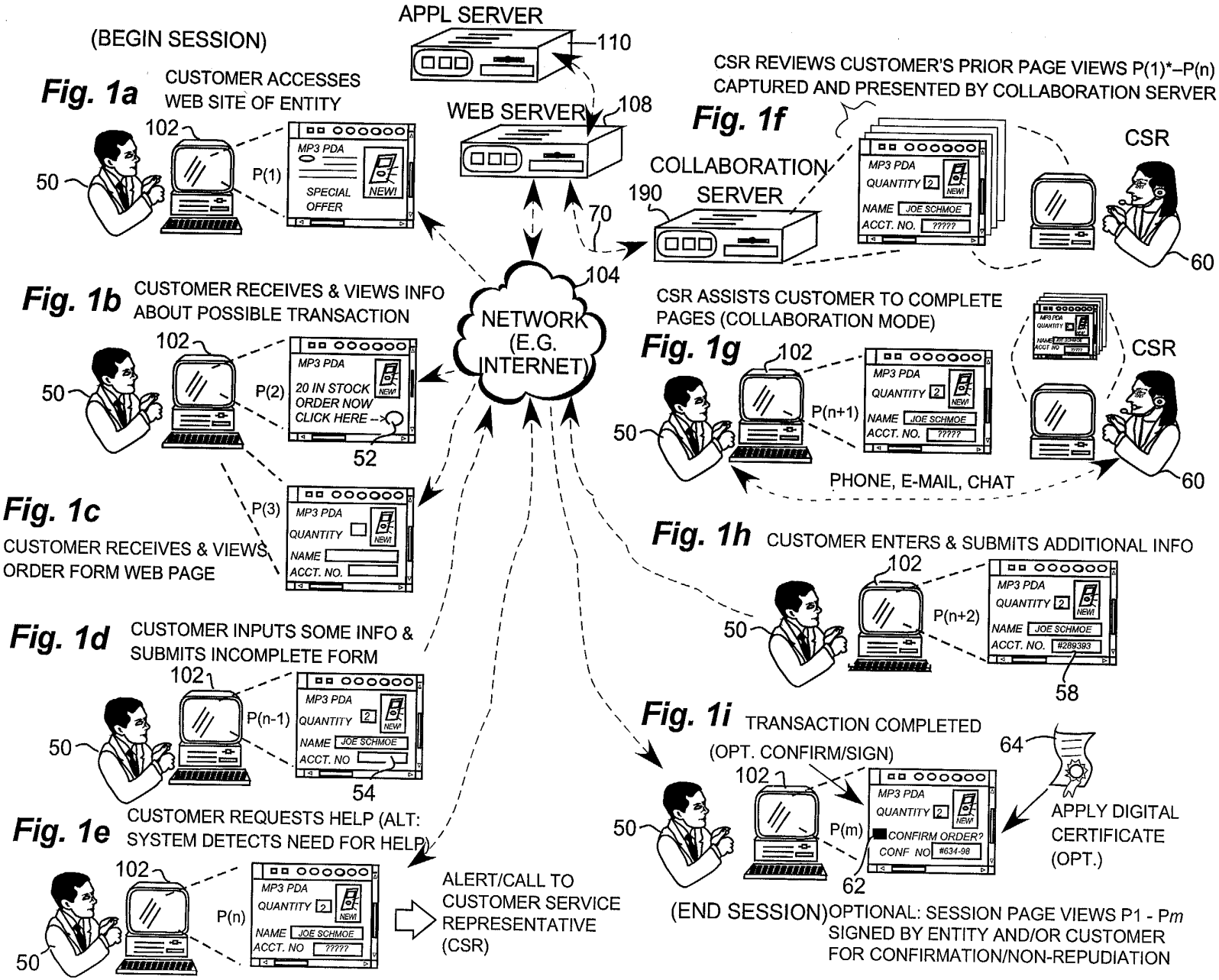


WEB SESSION COLLABORATION - EXAMPLE TRANSACTION

TOSETT 2332004T

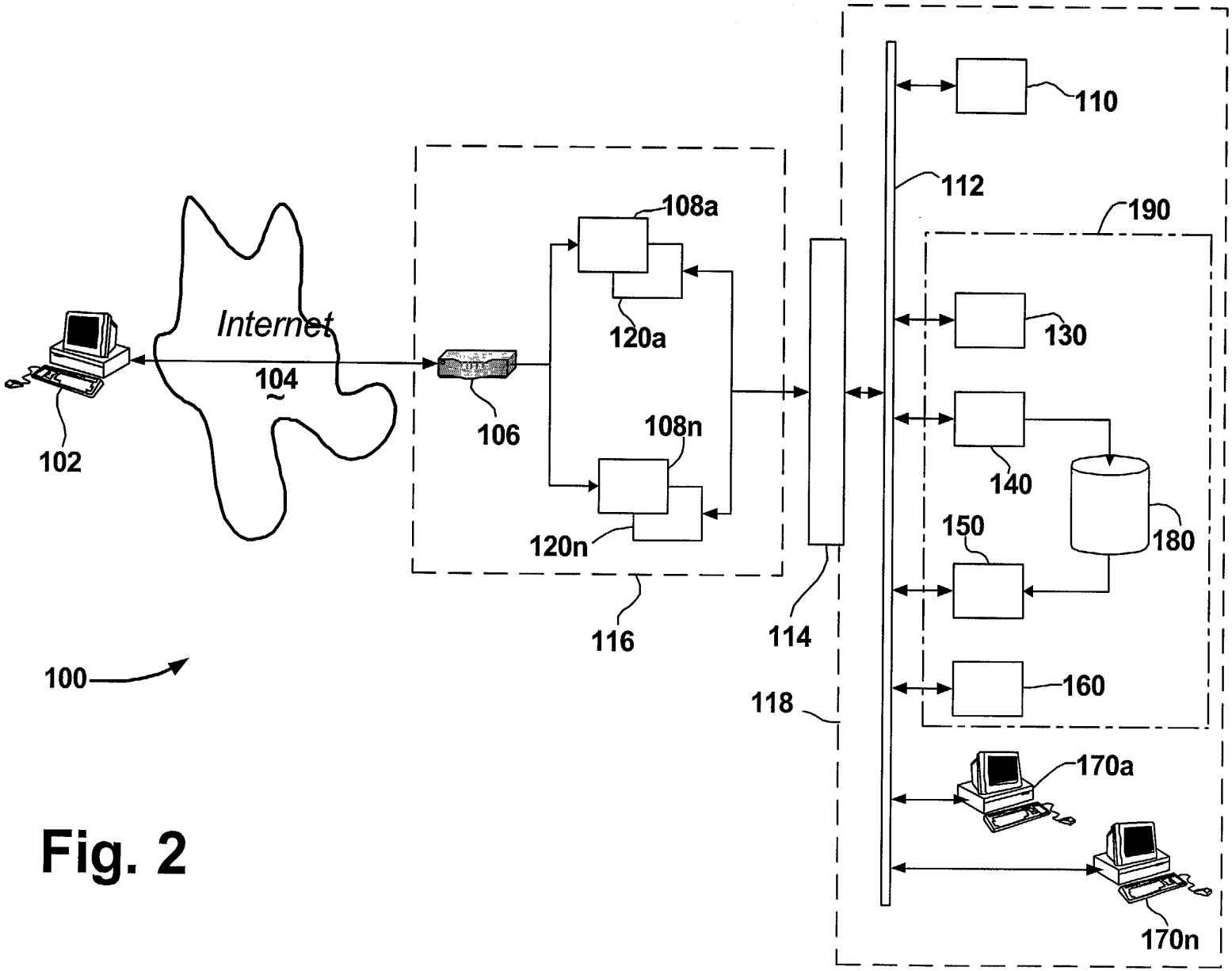


Fig. 2

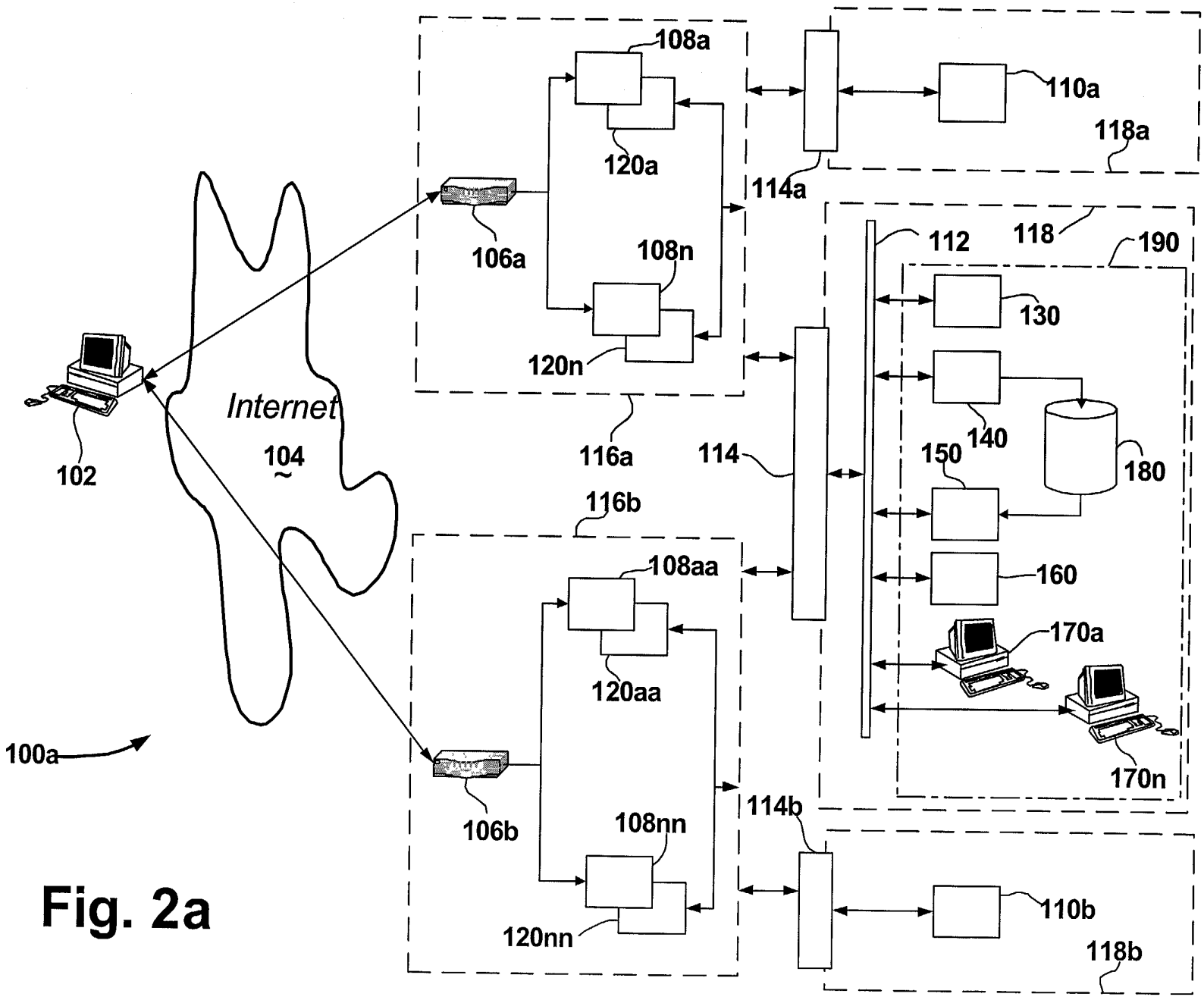

108a
110a
118a
120a
114a
106a
108n
112
118
190
130
120n
Internet
104
102
116a
114
140
150
180
116b
108aa
160
120aa
170a
100a
170n
114b
106b
108nn
110b
120nn
118b

Fig. 2a

TOCETT 20020001

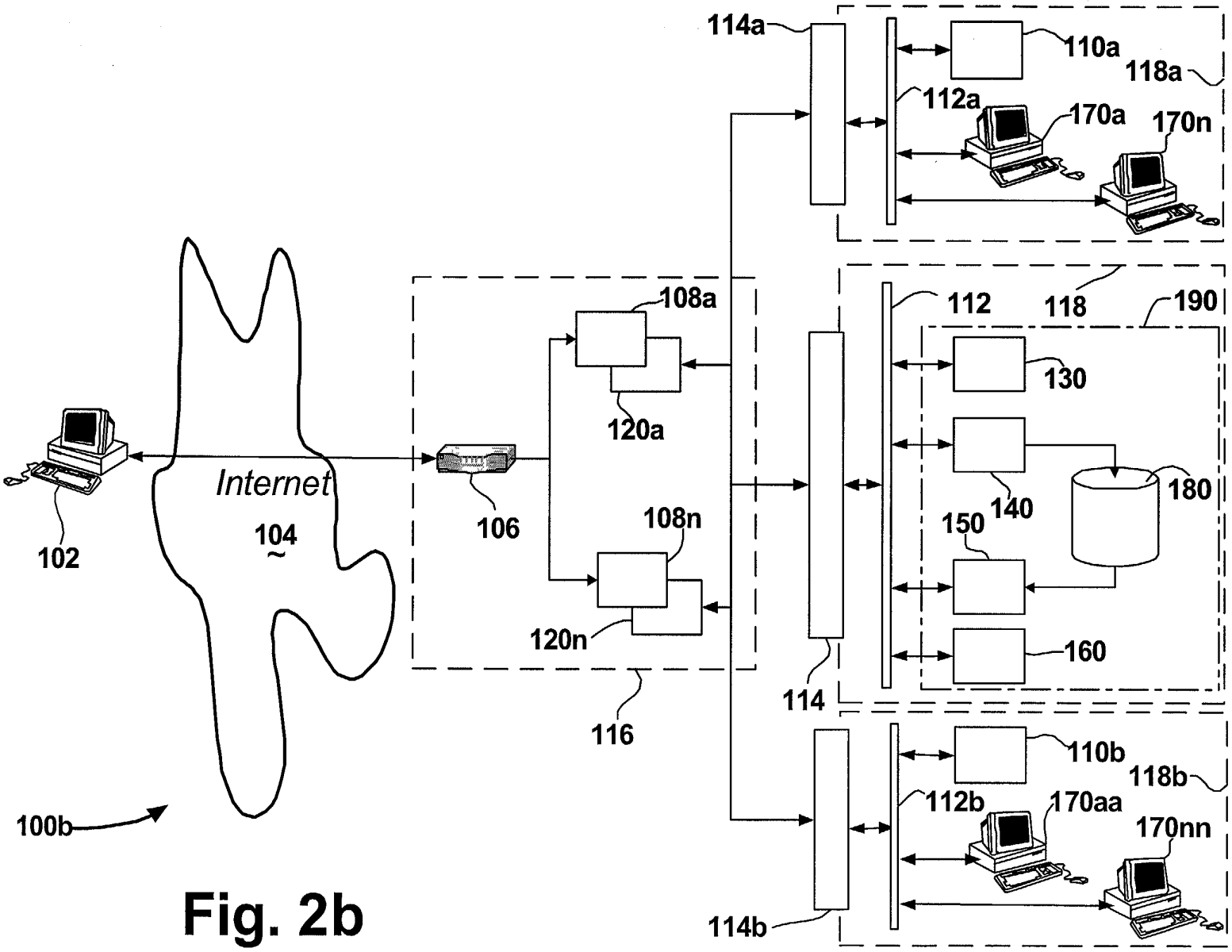


Fig. 2b

TARGET 2020202

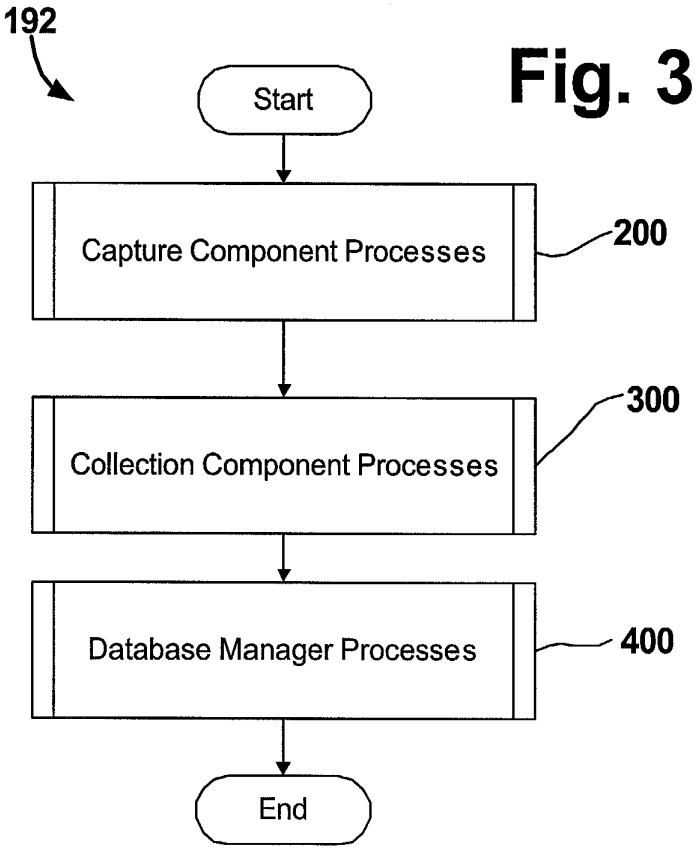


Fig. 3

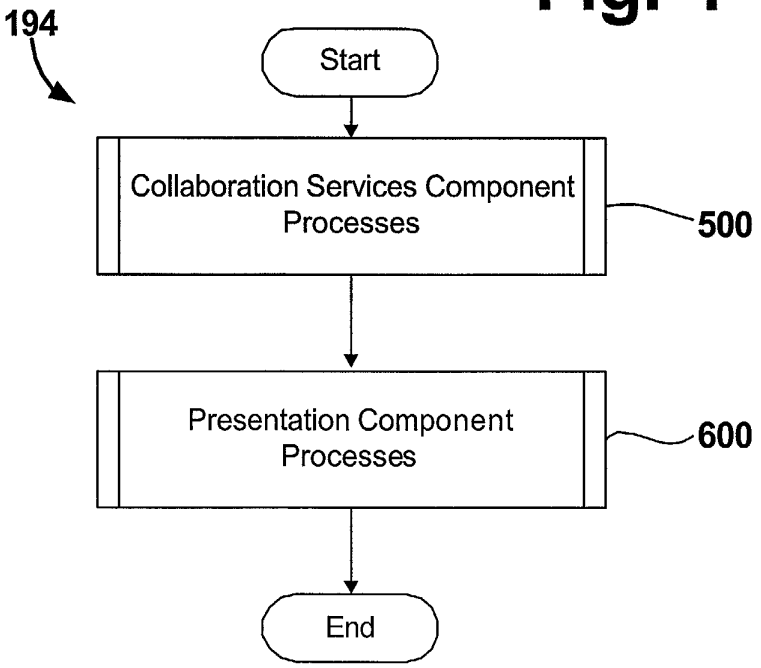


Fig. 4

PGPUB: 20080208

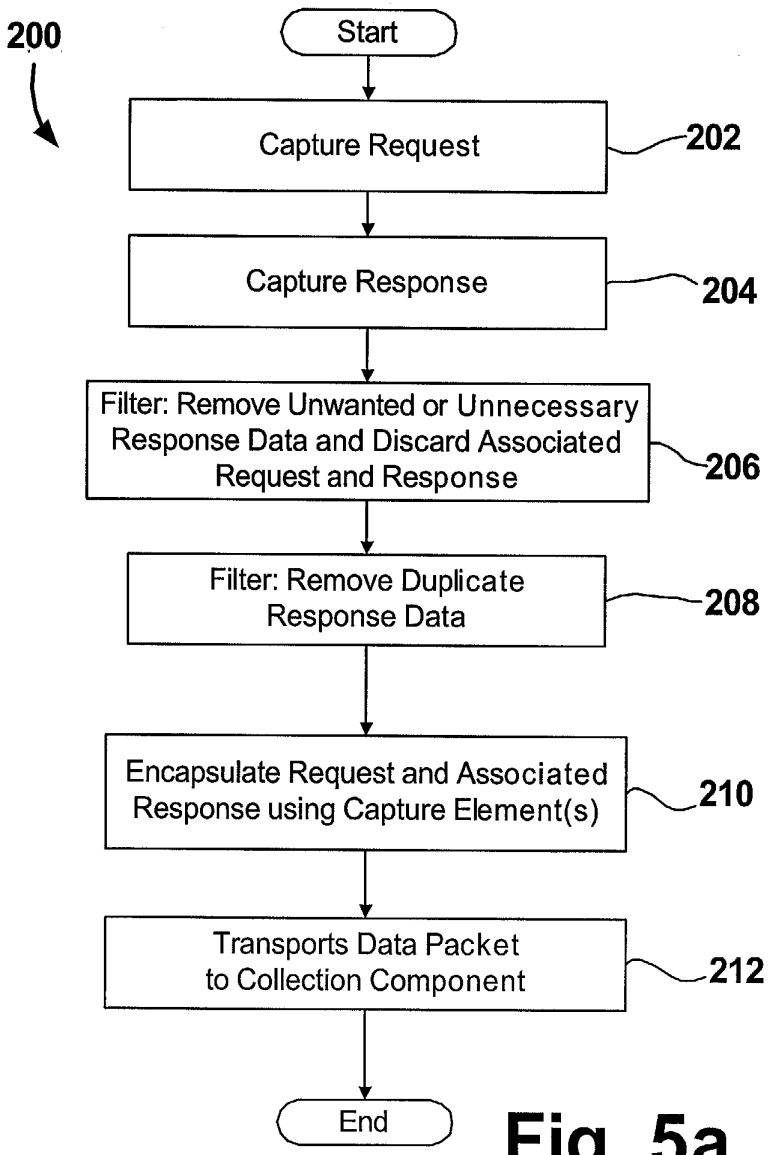


Fig. 5a

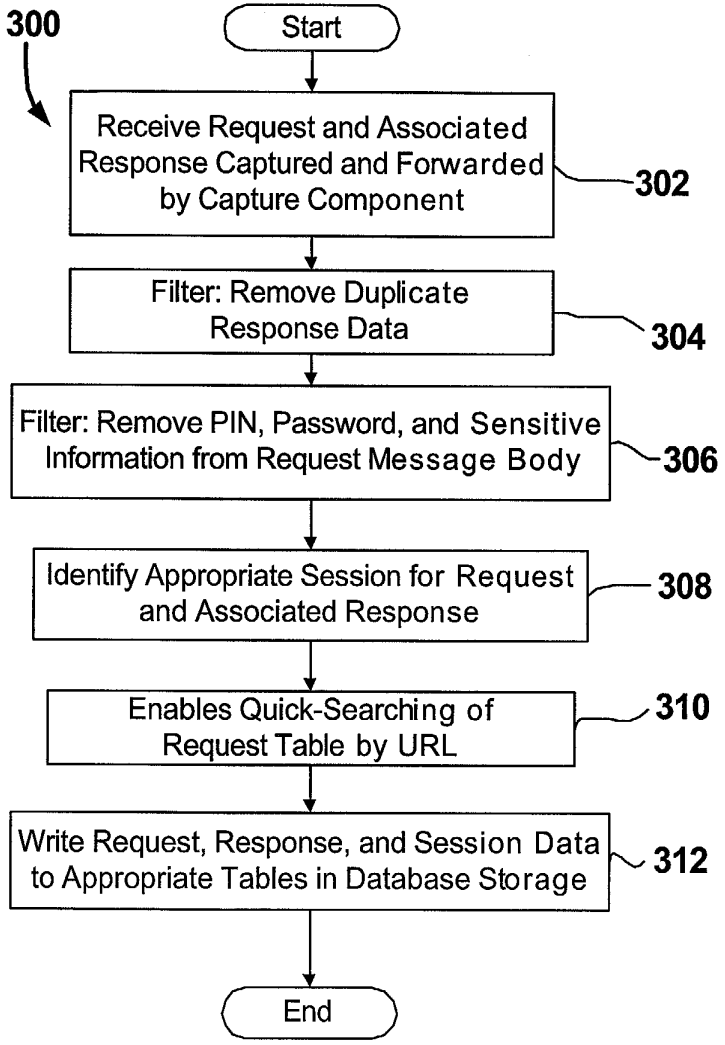


Fig. 5b

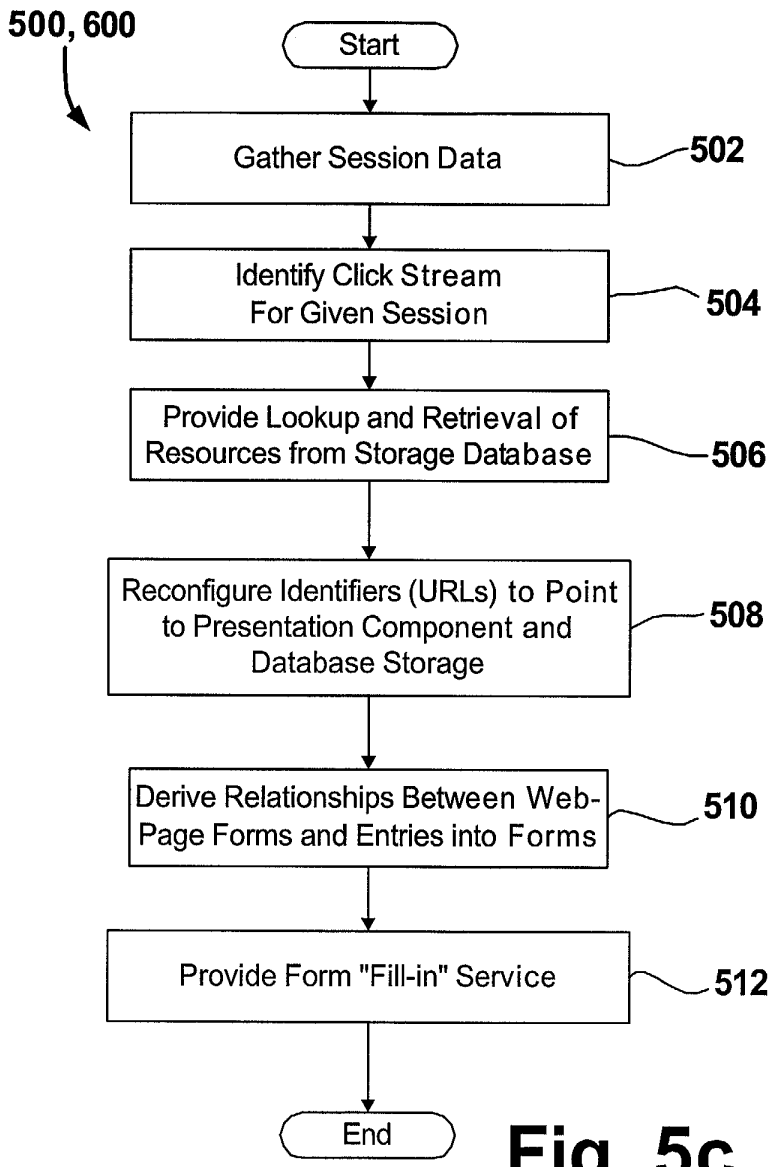

500, 600
Start
Gather Session Data
502
Identify Click Stream For Given Session
504
Provide Lookup and Retrieval of Resources from Storage Database
506
Reconfigure Identifiers (URLs) to Point to Presentation Component and Database Storage
508
Derive Relationships Between Web-Page Forms and Entries into Forms
510
Provide Form "Fill-in" Service
512
End

Fig. 5c

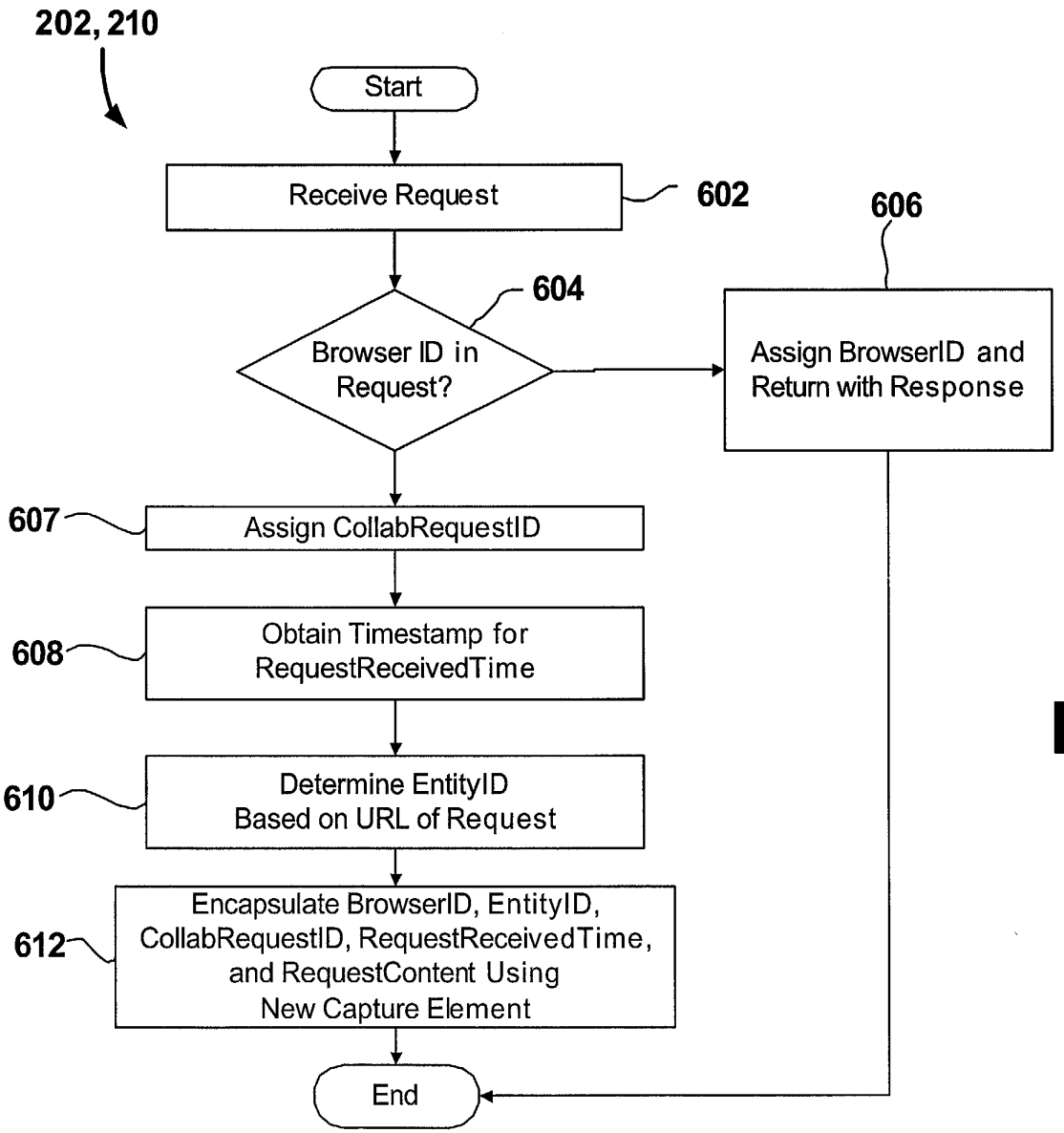
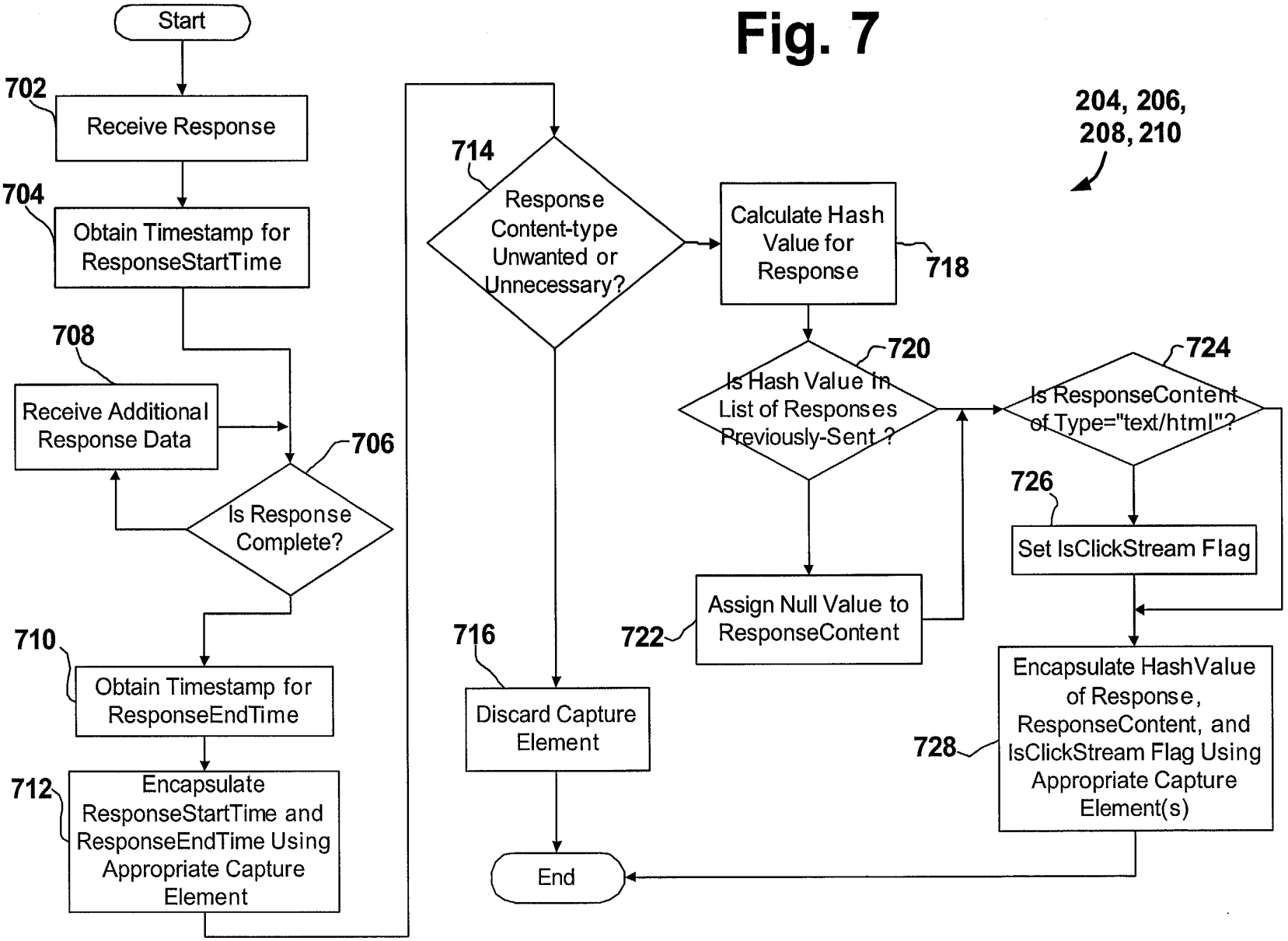

202, 210
Start
Receive Request
602
606
604
Browser ID in Request?
Assign BrowserID and Return with Response
607
Assign CollabRequestID
608
Obtain Timestamp for RequestReceivedTime
610
Determine EntityID Based on URL of Request
612
Encapsulate BrowserID, EntityID, CollabRequestID, RequestReceivedTime, and RequestContent Using New Capture Element
End

Fig. 6

FORCE-3828303

Fig. 7



Capture Element (Request/Response Pair) (800a)

802	803	804	805	806	808	810	812	814	816
Browser ID	Entity ID	CollabRequestID	RequestReceivedTime	Request Content	ResponseStartTime	ResponseEndTime	Hash Value of Response	Response Content	Is Click Stream (flag)

Fig. 8a

Capture Element (Request only) (800b)

802	803	804	805	806	808	810	812	816
BrowserID	EntityID	CollabRequestID	RequestReceivedTime	Request Content	ResponseStartTime	ResponseEndTime	Hash Value of Response	Is Click Stream (flag)

Fig. 8b

Capture Element (Response only) (800c)

812	814
Hash Value of Response	ResponseContent

Fig. 8c

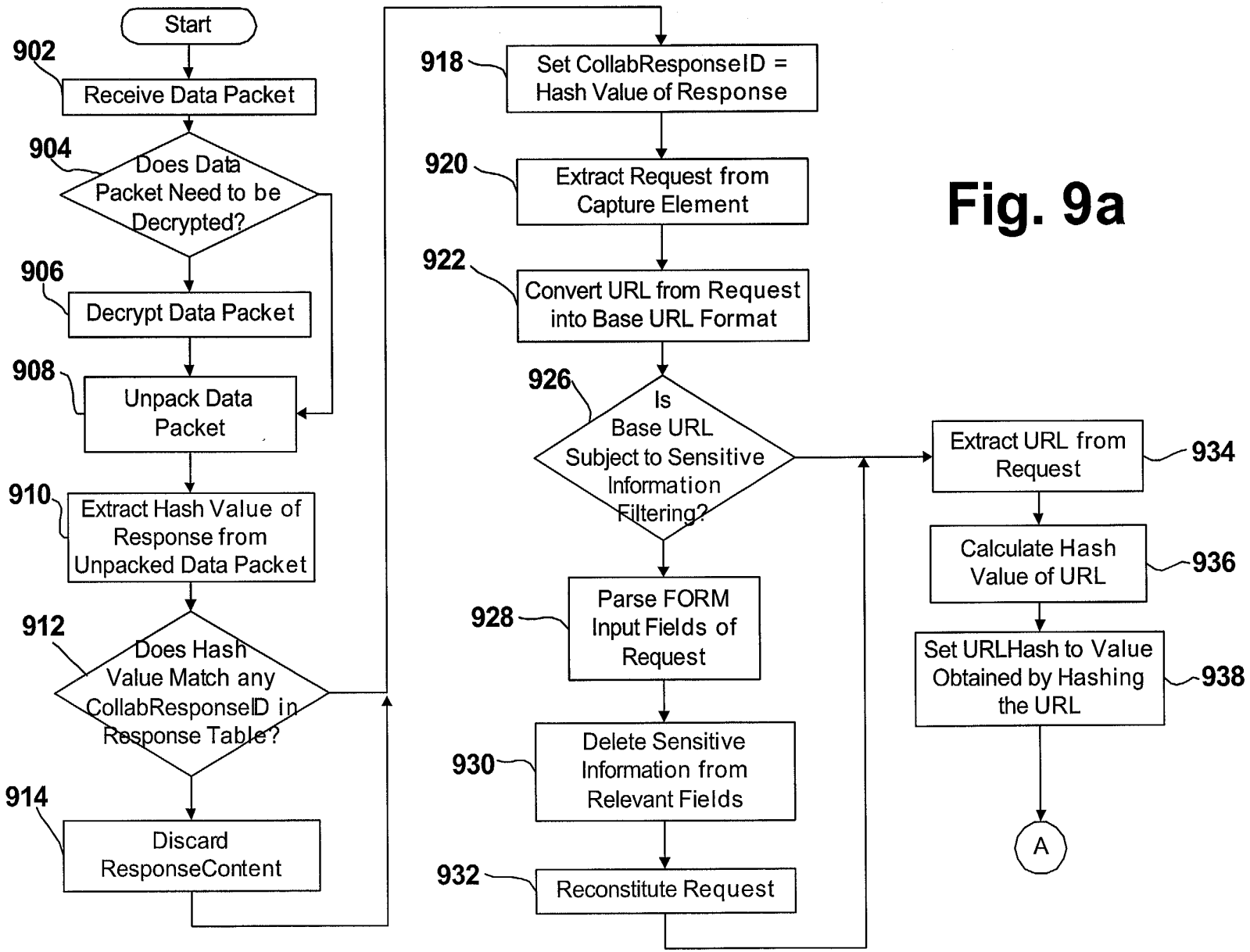

Start
902
Receive Data Packet
904
Does Data Packet Need to be Decrypted?
906
Decrypt Data Packet
908
Unpack Data Packet
910
Extract Hash Value of Response from Unpacked Data Packet
912
Does Hash Value Match any CollabResponseID in Response Table?
914
Discard ResponseContent
918
Set CollabResponseID = Hash Value of Response
920
Extract Request from Capture Element
922
Convert URL from Request into Base URL Format
926
Is Base URL Subject to Sensitive Information Filtering?
928
Parse FORM Input Fields of Request
930
Delete Sensitive Information from Relevant Fields
932
Reconstitute Request
934
Extract URL from Request
936
Calculate Hash Value of URL
938
Set URLHash to Value Obtained by Hashing the URL
A

Fig. 9a

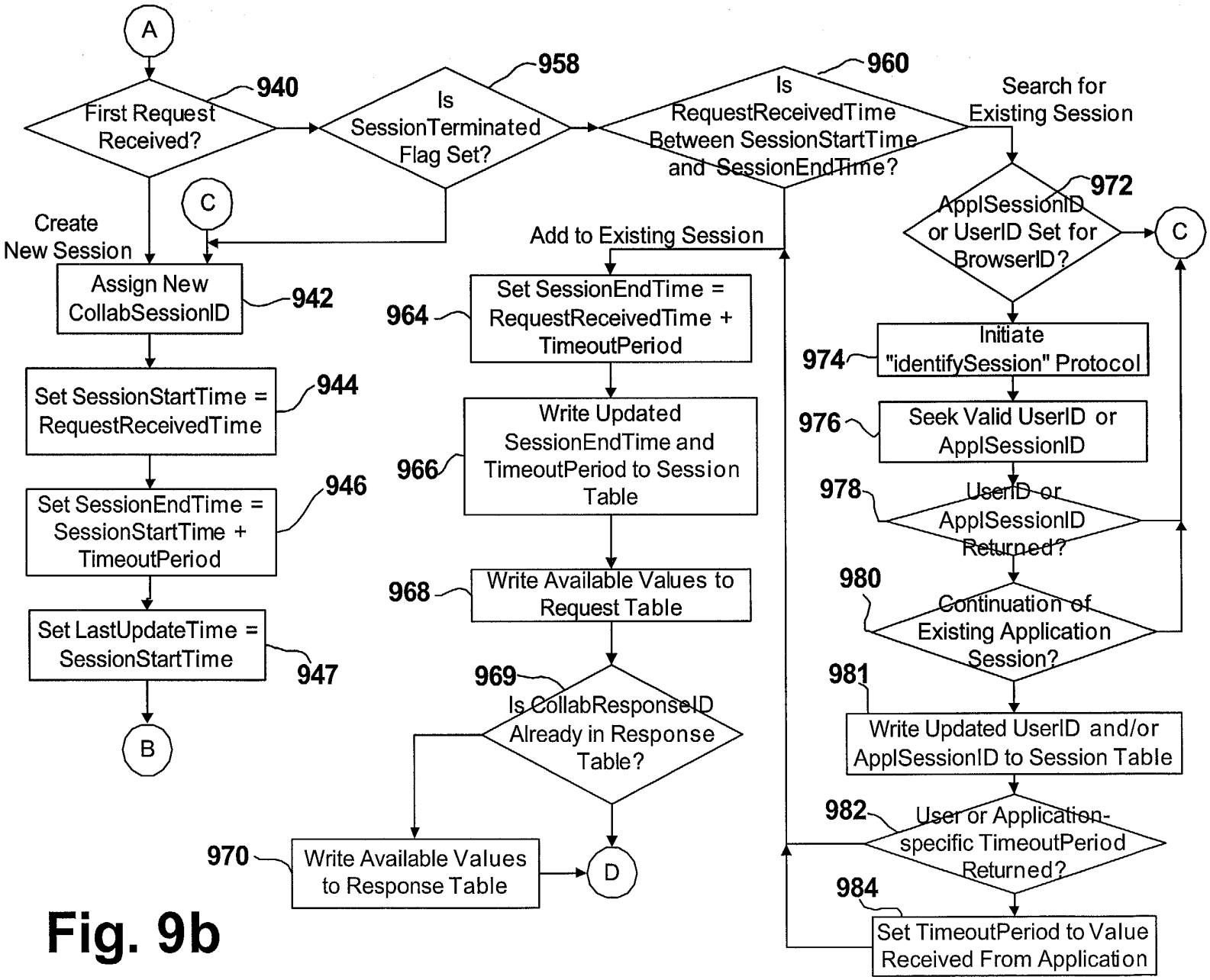

A
First Request Received?
940
Is SessionTerminated Flag Set?
958
Is RequestReceivedTime Between SessionStartTime and SessionEndTime?
960
Search for Existing Session
C
Create New Session
Assign New CollabSessionID
942
Set SessionStartTime = RequestReceivedTime
944
Set SessionEndTime = SessionStartTime + TimeoutPeriod
946
Set LastUpdateTime = SessionStartTime
947
B
Add to Existing Session
964
Set SessionEndTime = RequestReceivedTime + TimeoutPeriod
966
Write Updated SessionEndTime and TimeoutPeriod to Session Table
968
Write Available Values to Request Table
969
Is CollabResponseID Already in Response Table?
970
Write Available Values to Response Table
D
ApplSessionID or UserID Set for BrowserID?
972
C
974
Initiate "identifySession" Protocol
976
Seek Valid UserID or ApplSessionID
978
UserID or ApplSessionID Returned?
980
Continuation of Existing Application Session?
981
Write Updated UserID and/or ApplSessionID to Session Table
982
User or Application-specific TimeoutPeriod Returned?
984
Set TimeoutPeriod to Value Received From Application

Fig. 9b

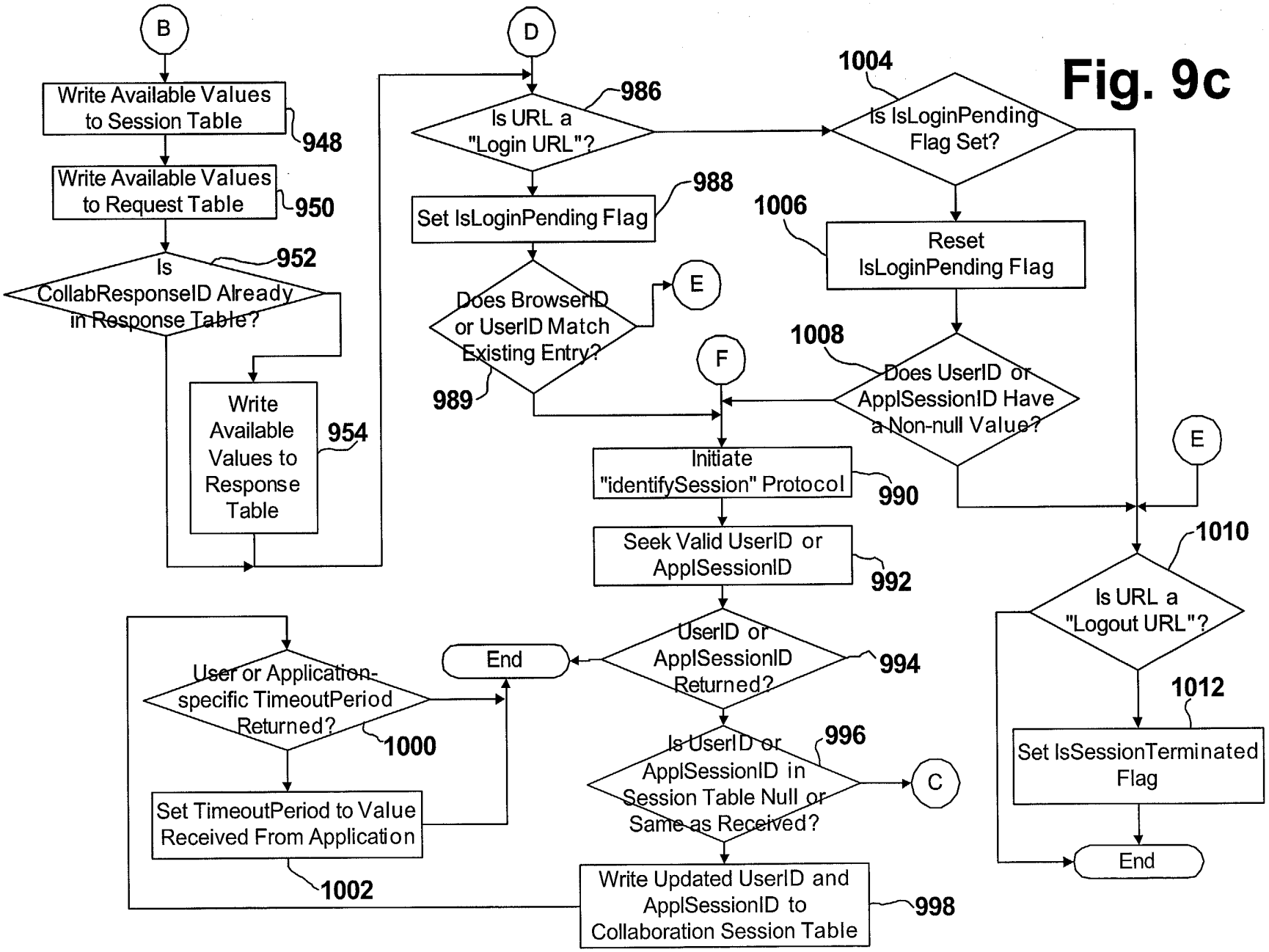

B
Write Available Values to Session Table
948
Write Available Values to Request Table
950
Is CollabResponseID Already in Response Table?
952
Write Available Values to Response Table
954
D
Is URL a "Login URL"?
986
Set IsLoginPending Flag
988
Does BrowserID or UserID Match Existing Entry?
989
E
F
Initiate "identifySession" Protocol
990
Seek Valid UserID or ApplSessionID
992
UserID or ApplSessionID Returned?
994
End
User or Application-specific TimeoutPeriod Returned?
1000
Set TimeoutPeriod to Value Received From Application
1002
Is UserID or ApplSessionID in Session Table Null or Same as Received?
996
C
Write Updated UserID and ApplSessionID to Collaboration Session Table
998
Is IsLoginPending Flag Set?
1004
Reset IsLoginPending Flag
1006
Does UserID or ApplSessionID Have a Non-null Value?
1008
E
Is URL a "Logout URL"?
1010
Set IsSessionTerminated Flag
1012
End

Fig. 9c

Session Table (1052)

Record #	1	2	3	4	...	x
CollabSessionID						
BrowserID						
UserID						
ApplSessionID						
EntityID						
SessionStartTime						
SessionEndTime						
LastUpdateTime						
TimeoutPeriod						
IsLoginPending (flag)						
IsSessionTerminated (flag)						

Fig. 10a

Request Table (1054)

Record #	1	2	3	4	...	y
CollabSessionID						
CollabRequestID						
RequestContent						
RequestReceivedTime						
URLHash						
CollabResponseID						
ResponseStartTime						
ResponseEndTime						
IsClickStream (flag)						

Fig. 10b

Response Table (1056)

Record #	1	2	3	4	...	z
CollabResponseID						
ResponseContent						

Fig. 10c

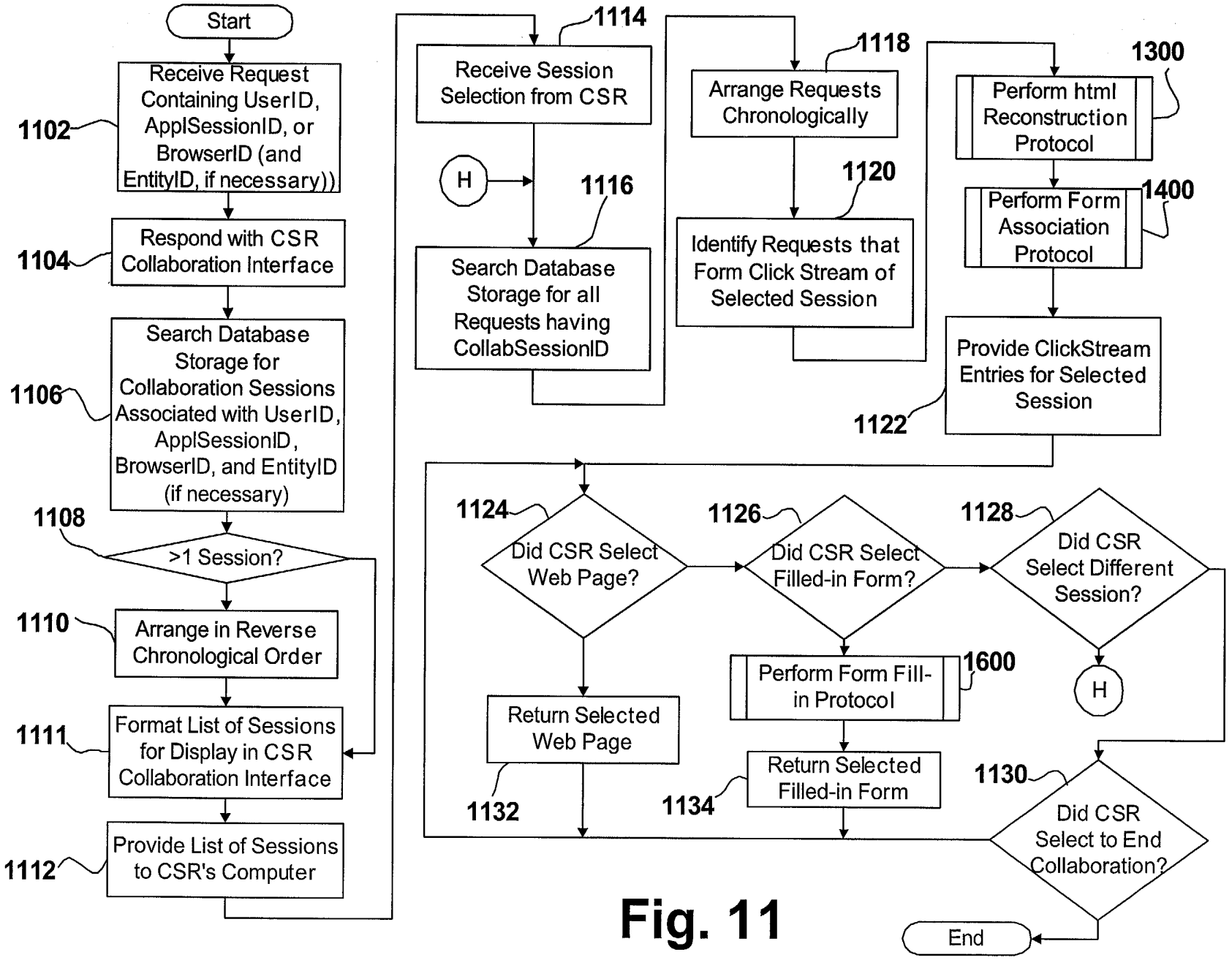

Start
Receive Request Containing UserID, ApplSessionID, or BrowserID (and EntityID, if necessary))
1102
Respond with CSR Collaboration Interface
1104
Search Database Storage for Collaboration Sessions Associated with UserID, ApplSessionID, BrowserID, and EntityID (if necessary)
1106
1108
>1 Session?
1110
Arrange in Reverse Chronological Order
1111
Format List of Sessions for Display in CSR Collaboration Interface
1112
Provide List of Sessions to CSR's Computer
1114
Receive Session Selection from CSR
H
1116
Search Database Storage for all Requests having CollabSessionID
1118
Arrange Requests Chronologically
1120
Identify Requests that Form Click Stream of Selected Session
1300
Perform html Reconstruction Protocol
1400
Perform Form Association Protocol
Provide ClickStream Entries for Selected Session
1122
1124
Did CSR Select Web Page?
1126
Did CSR Select Filled-in Form?
1128
Did CSR Select Different Session?
H
Return Selected Web Page
1132
Perform Form Fill-in Protocol
1600
Return Selected Filled-in Form
1134
1130
Did CSR Select to End Collaboration?
End

Fig. 11

Single Web Session

	Request	**Resources Referenced in Content of Corresponding Response**
CS	**FirstPage.html**	MyStyle.css FirstPic.jpg
	MyStyle.css	
	FirstPic.jpg	
CS	**SecondPage.html**	MyStyle.css FirstPic.jpg SecondPic.jpg
	SecondPic.jpg	
CS	**ThirdPage.html**	MyStyle.css FirstPic.jpg SecondPic.jpg
CS	**FourthPage.html**	

Fig. 12

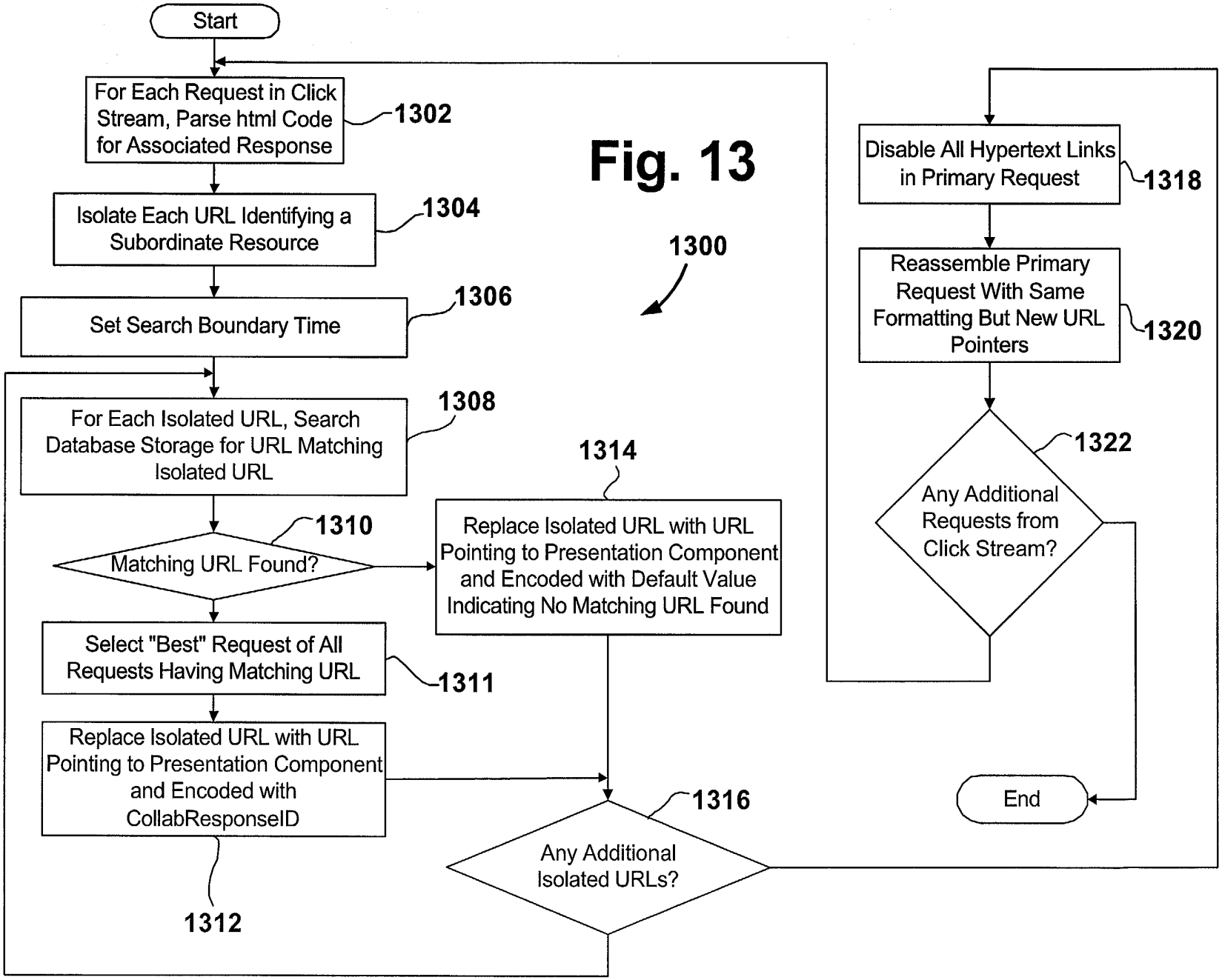

Start
For Each Request in Click Stream, Parse html Code for Associated Response
1302
Isolate Each URL Identifying a Subordinate Resource
1304
Set Search Boundary Time
1306
For Each Isolated URL, Search Database Storage for URL Matching Isolated URL
1308
Matching URL Found?
1310
Replace Isolated URL with URL Pointing to Presentation Component and Encoded with Default Value Indicating No Matching URL Found
1314
Select "Best" Request of All Requests Having Matching URL
1311
Replace Isolated URL with URL Pointing to Presentation Component and Encoded with CollabResponseID
1312
Any Additional Isolated URLs?
1316
Disable All Hypertext Links in Primary Request
1318
Reassemble Primary Request With Same Formatting But New URL Pointers
1320
Any Additional Requests from Click Stream?
1322
End
1300

Fig. 13

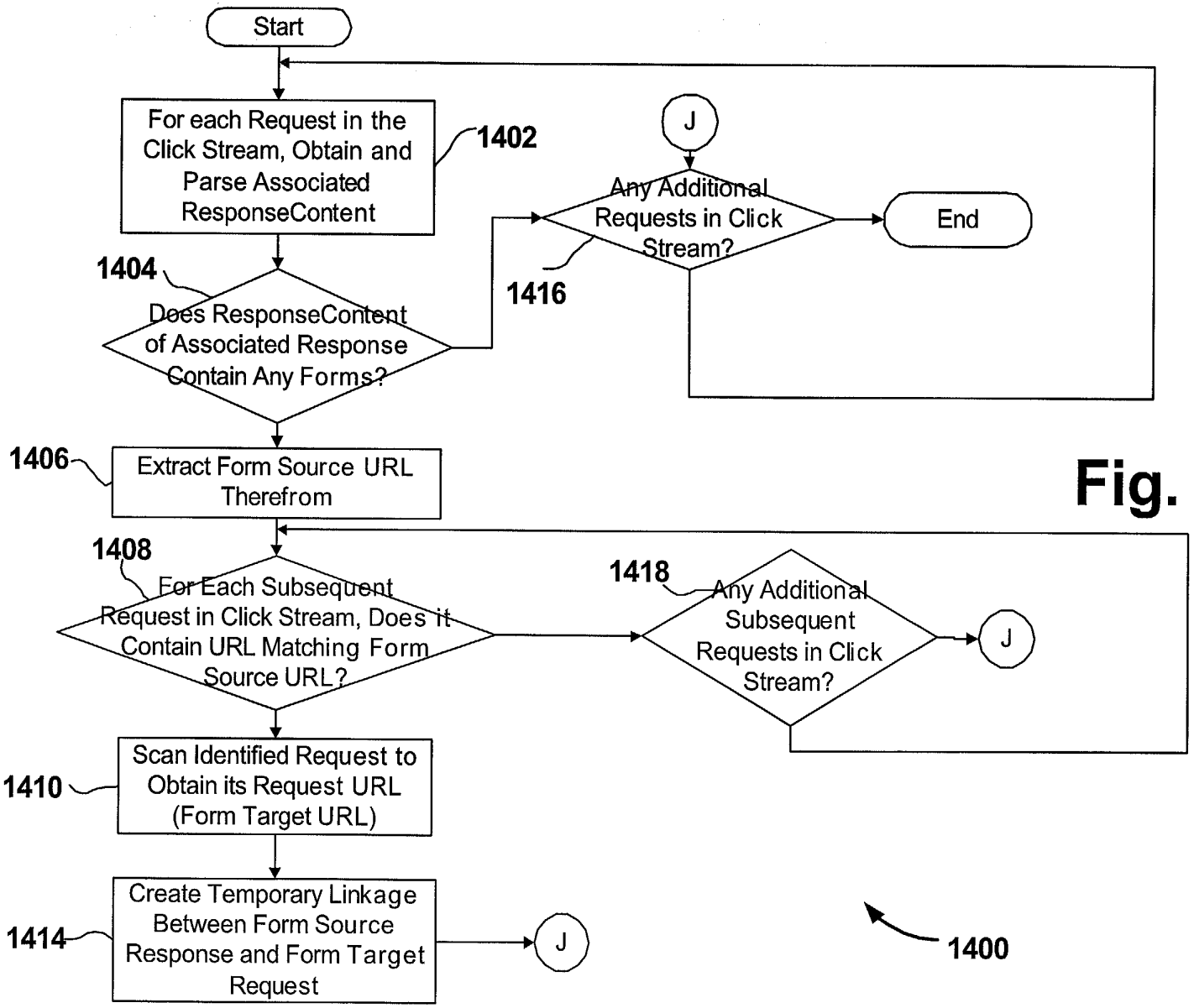

Start
For each Request in the Click Stream, Obtain and Parse Associated ResponseContent
1402
1404
Does ResponseContent of Associated Response Contain Any Forms?
1406
Extract Form Source URL Therefrom
1408
For Each Subsequent Request in Click Stream, Does it Contain URL Matching Form Source URL?
1410
Scan Identified Request to Obtain its Request URL (Form Target URL)
1414
Create Temporary Linkage Between Form Source Response and Form Target Request
J
1416
Any Additional Requests in Click Stream?
End
1418
Any Additional Subsequent Requests in Click Stream?
J
1400

Fig. 14

PAGE 2 OF 2

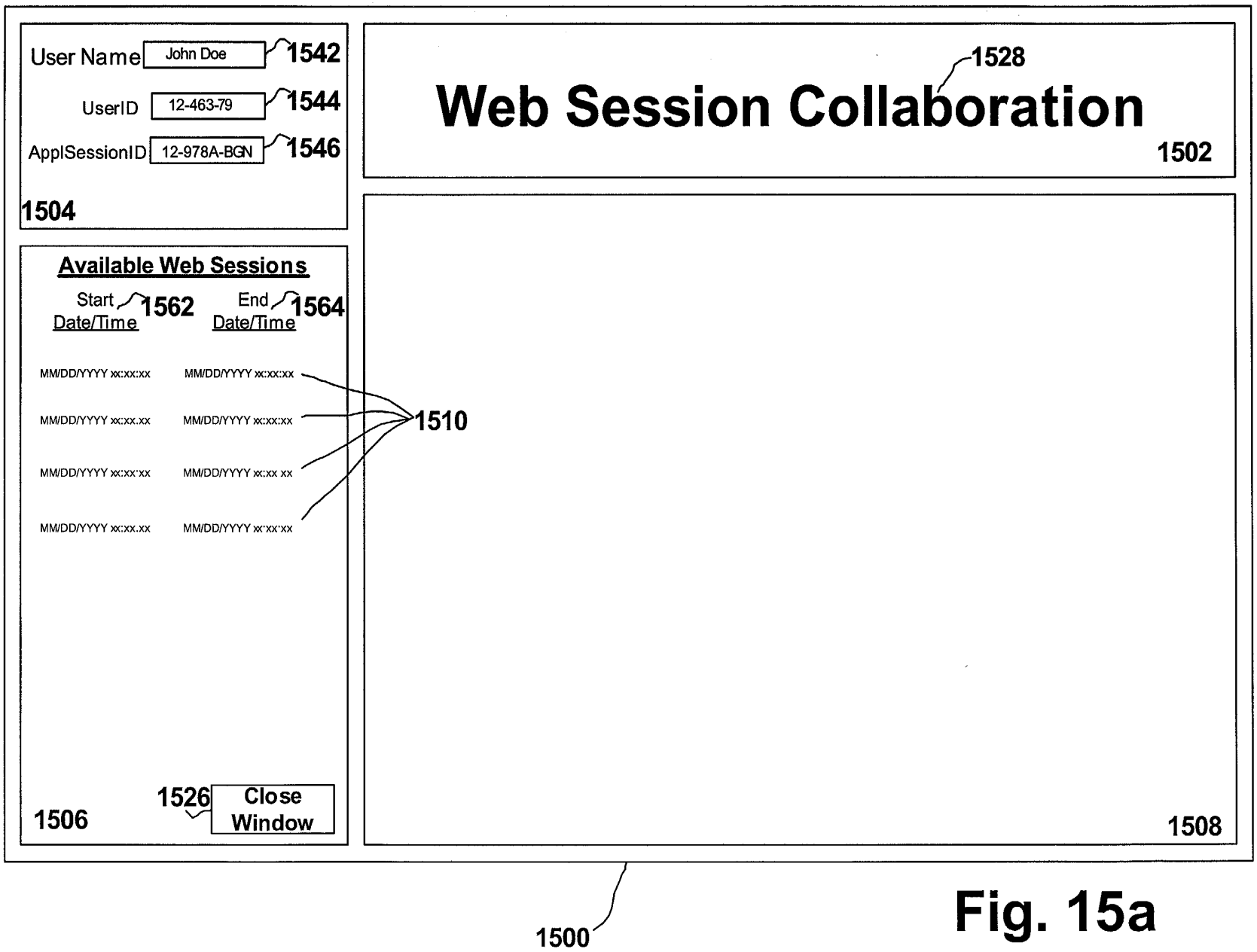


Fig. 15a

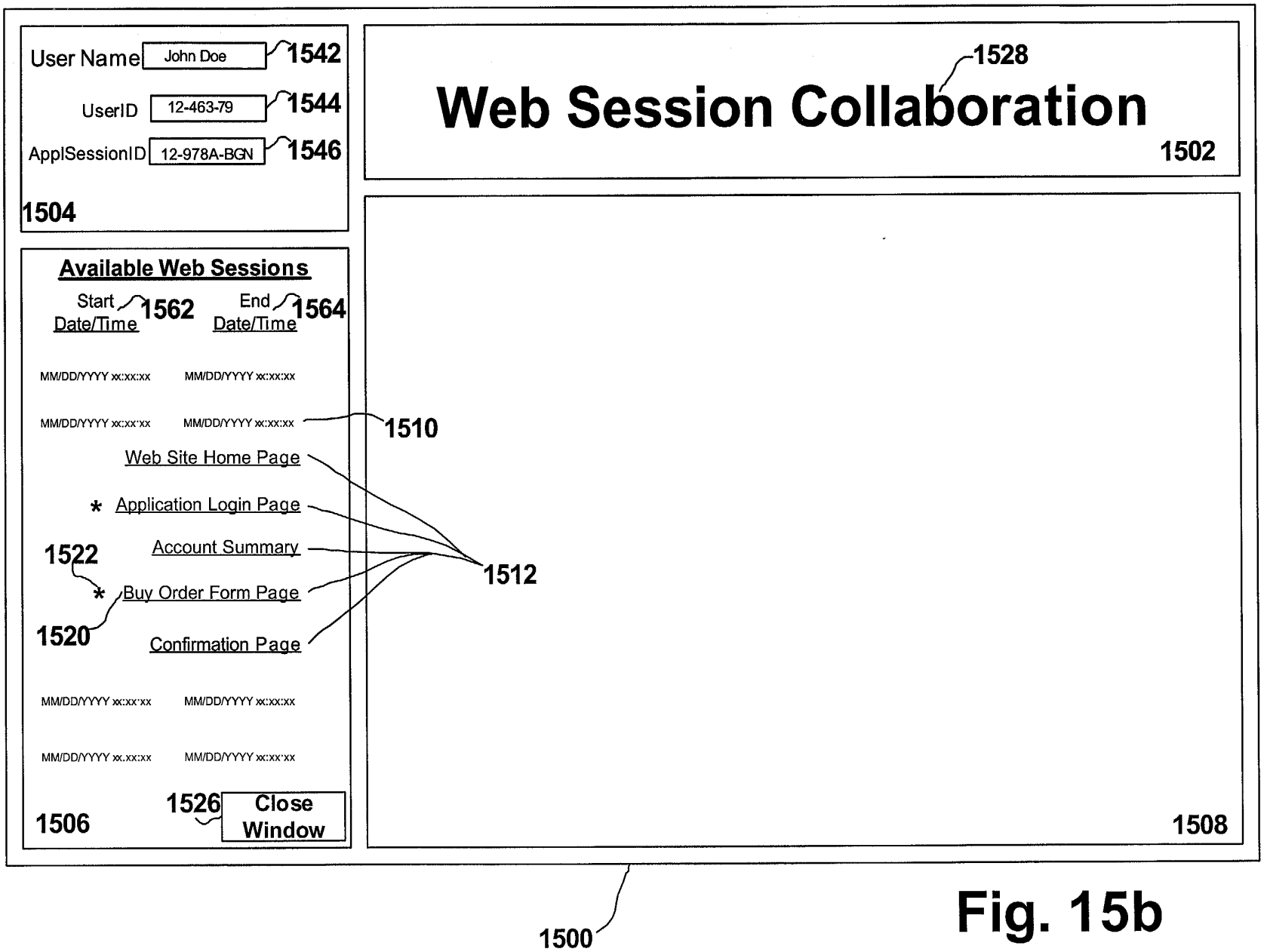

User Name
John Doe
1542
UserID
12-463-79
1544
ApplSessionID
12-978A-BGN
1546
1504
Available Web Sessions
Start Date/Time
1562
End Date/Time
1564
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx:xx
1510
Web Site Home Page
* Application Login Page
Account Summary
1522
* Buy Order Form Page
1520
Confirmation Page
1512
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx:xx
1506
1526
Close Window
1528
Web Session Collaboration
1502
1508
1500

Fig. 15b

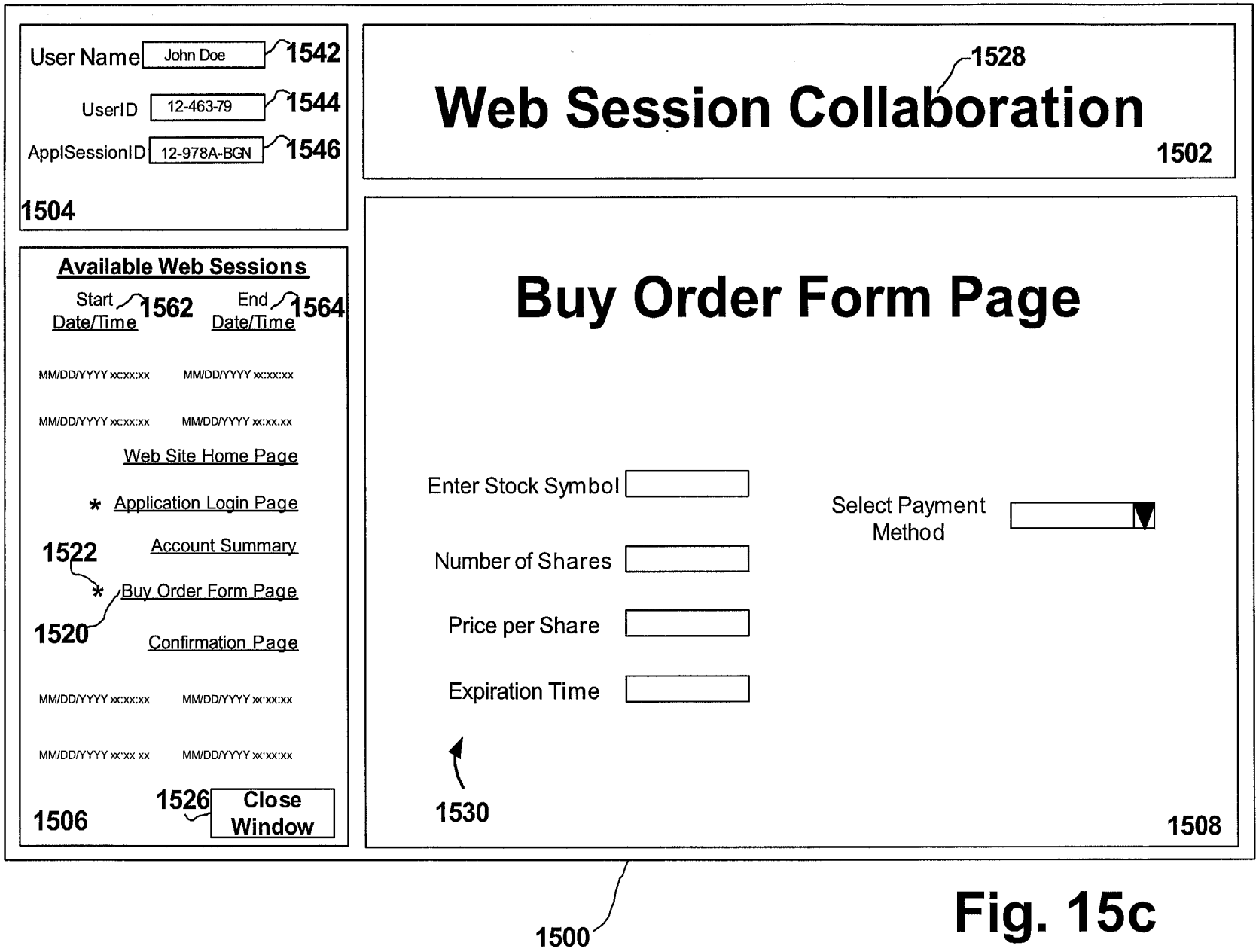

User Name
John Doe
1542
UserID
12-463-79
1544
ApplSessionID
12-978A-BGN
1546
1504
Available Web Sessions
Start Date/Time
1562
End Date/Time
1564
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx.xx
Web Site Home Page
* Application Login Page
Account Summary
1522
* Buy Order Form Page
1520
Confirmation Page
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx xx
MM/DD/YYYY xx:xx:xx
1506
1526
Close Window
1528
Web Session Collaboration
1502
Buy Order Form Page
Enter Stock Symbol
Select Payment Method
Number of Shares
Price per Share
Expiration Time
1530
1508
1500

Fig. 15c

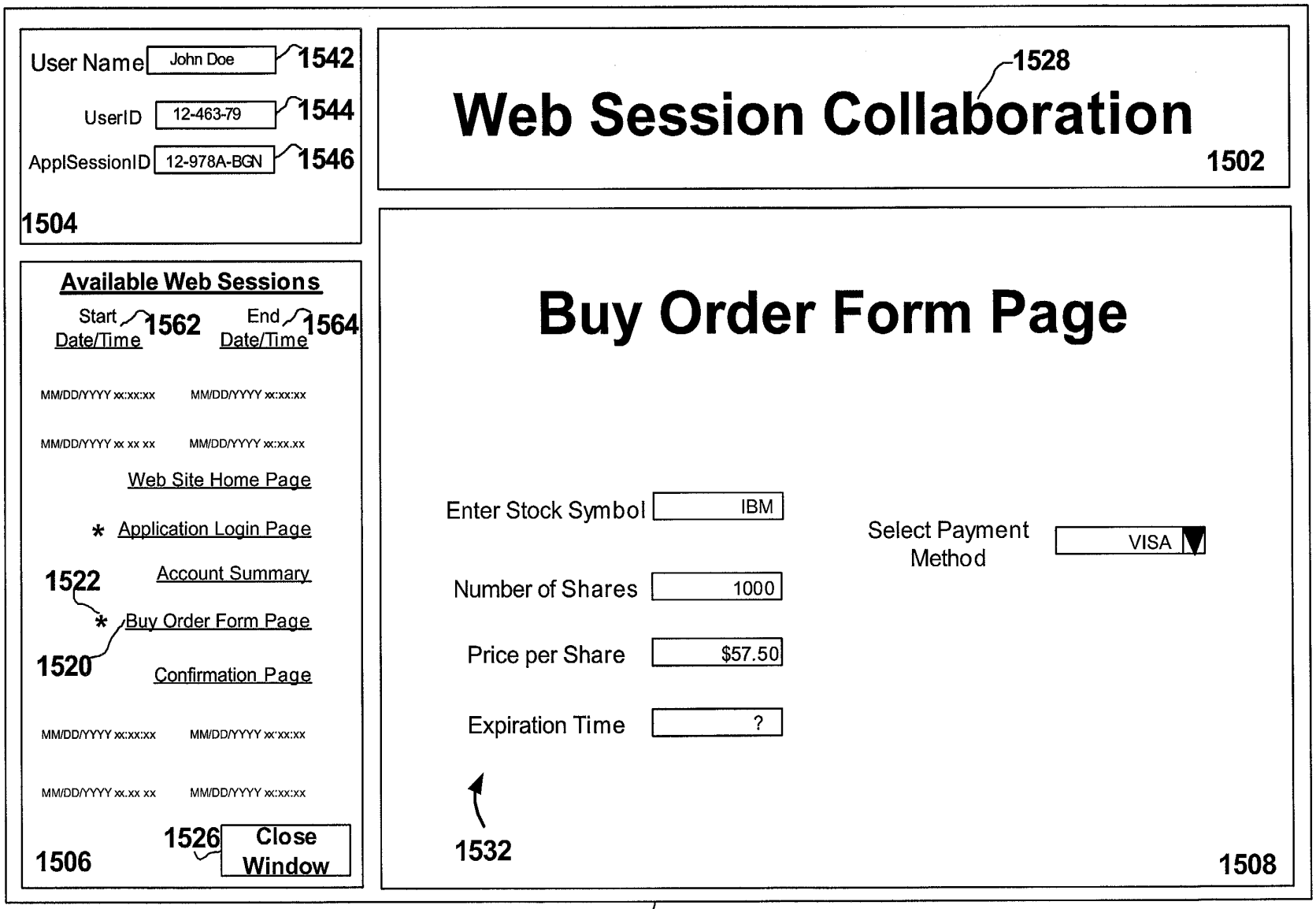

User Name
John Doe
1542
UserID
12-463-79
1544
ApplSessionID
12-978A-BGN
1546
1504
Available Web Sessions
Start Date/Time
1562
End Date/Time
1564
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx xx xx
MM/DD/YYYY xx:xx.xx
Web Site Home Page
* Application Login Page
Account Summary
1522
* Buy Order Form Page
1520
Confirmation Page
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx.xx xx
MM/DD/YYYY xx:xx:xx
1526
Close Window
1506
1528
Web Session Collaboration
1502
Buy Order Form Page
Enter Stock Symbol
IBM
Select Payment Method
VISA
Number of Shares
1000
Price per Share
$57.50
Expiration Time
?
1532
1508
1500

Fig. 15d

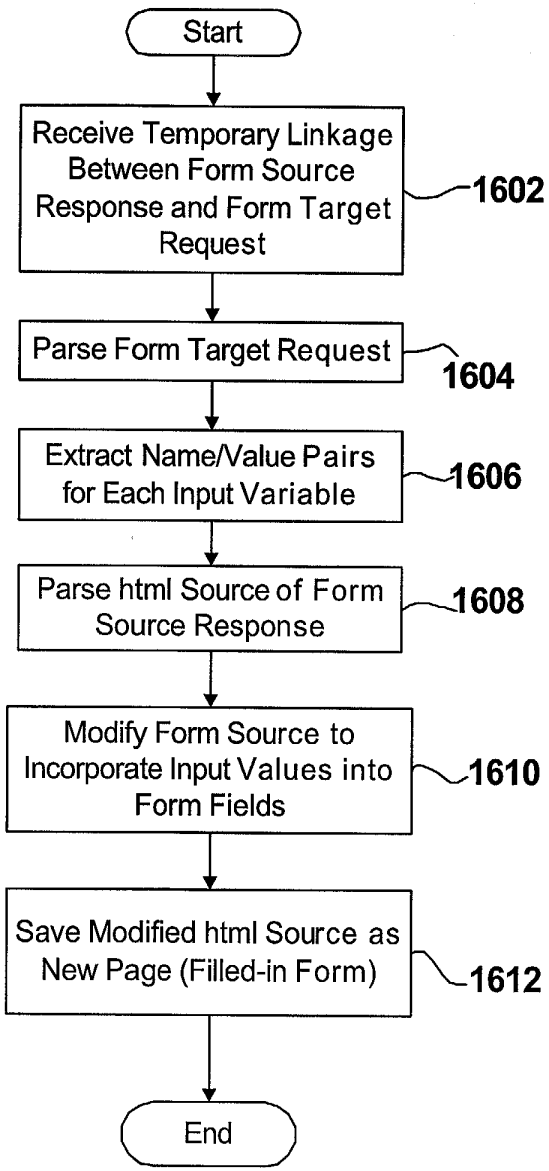

Start
Receive Temporary Linkage Between Form Source Response and Form Target Request
1602
Parse Form Target Request
1604
Extract Name/Value Pairs for Each Input Variable
1606
Parse html Source of Form Source Response
1608
Modify Form Source to Incorporate Input Values into Form Fields
1610
Save Modified html Source as New Page (Filled-in Form)
1612
End
1600

Fig. 16

FOCTF 3383030F

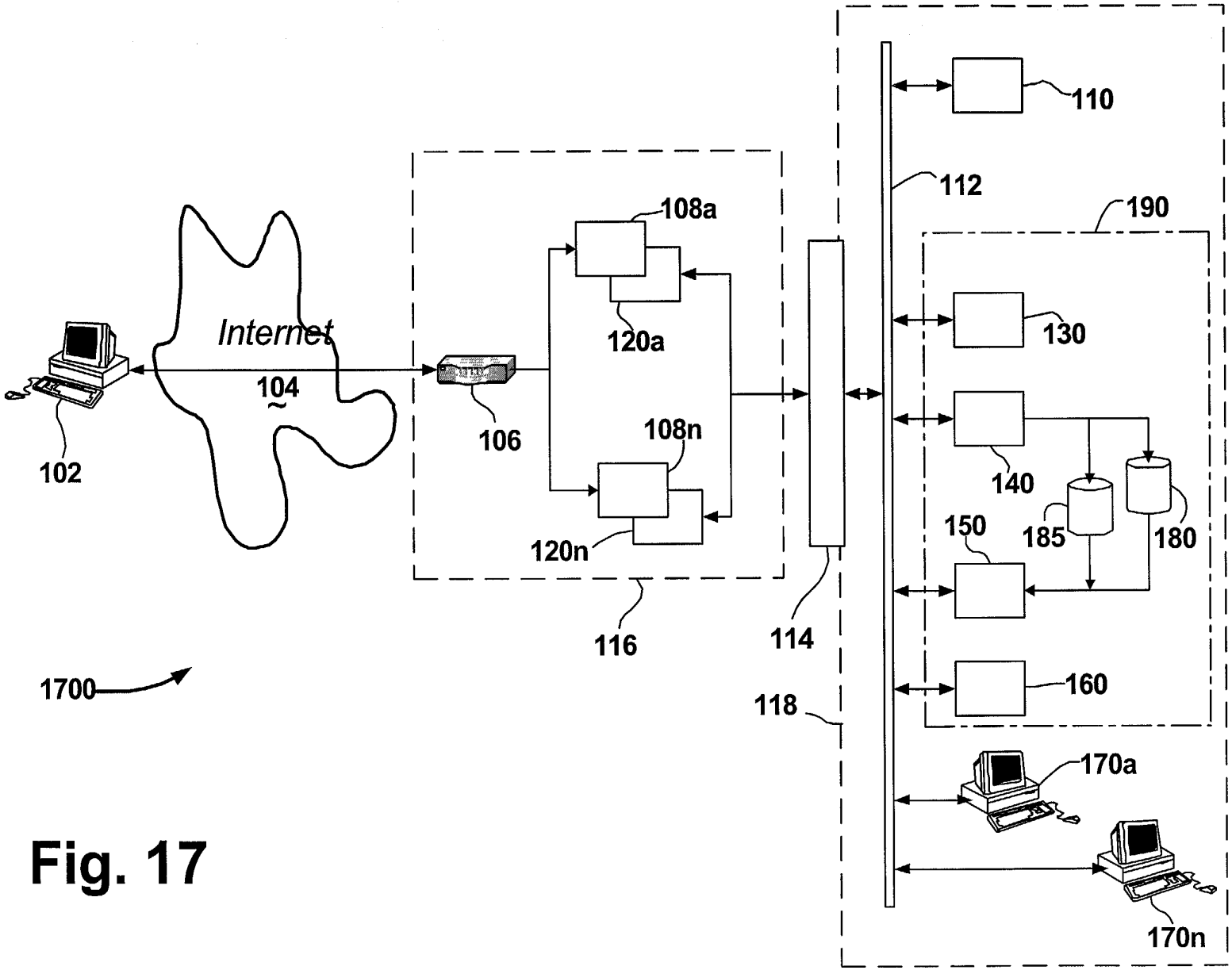


Fig. 17

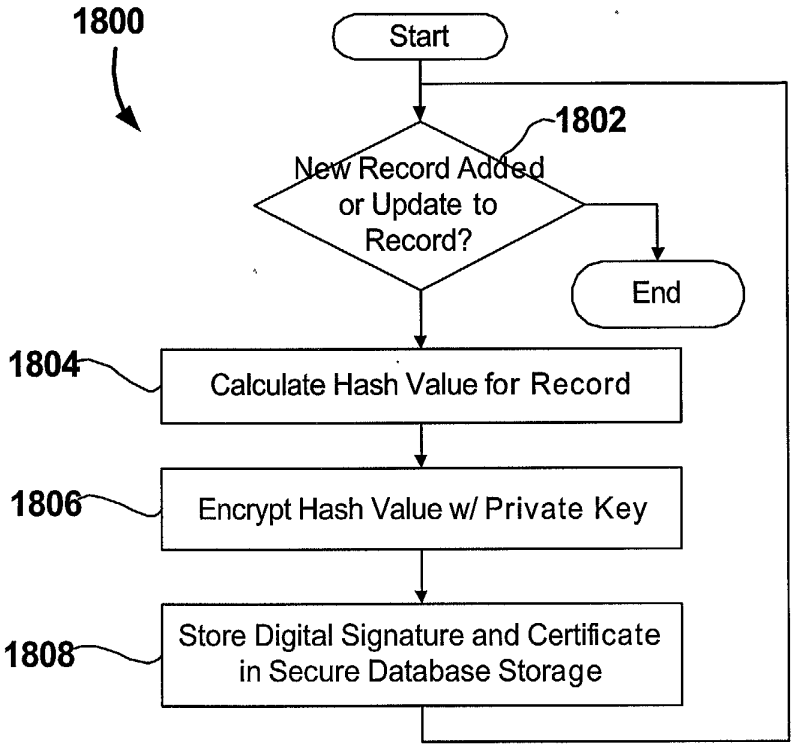

1800
Start
1802
New Record Added or Update to Record?
End
1804
Calculate Hash Value for Record
1806
Encrypt Hash Value w/ Private Key
1808
Store Digital Signature and Certificate in Secure Database Storage

Fig. 18

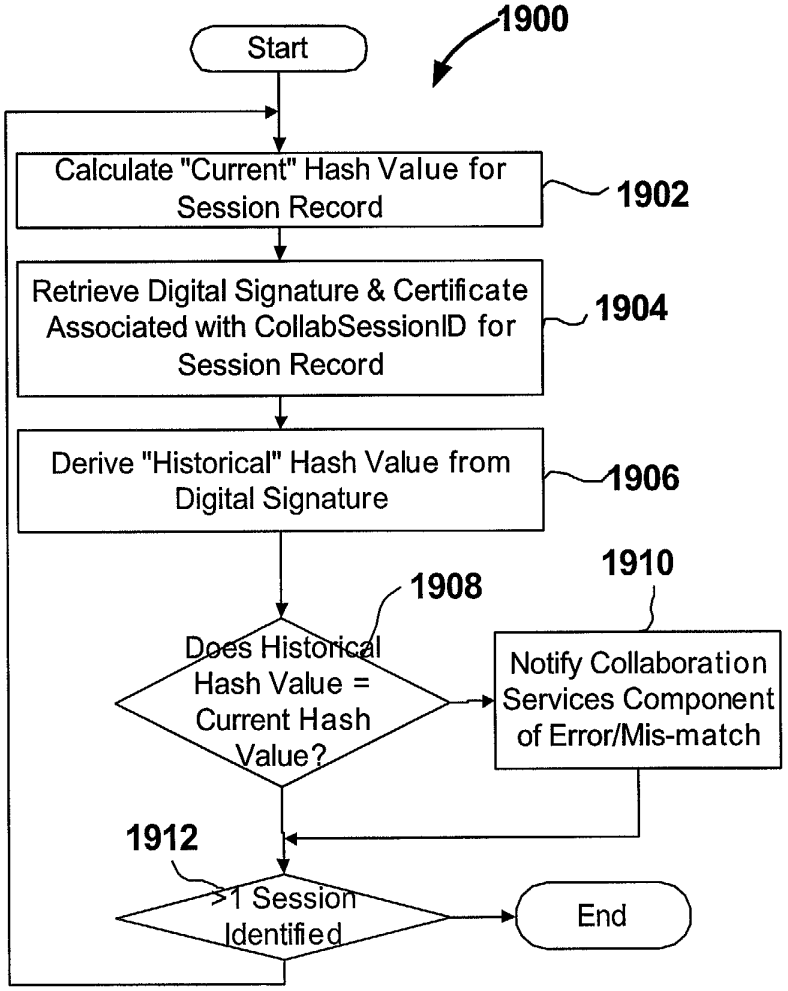

1900
Start
Calculate "Current" Hash Value for Session Record
1902
Retrieve Digital Signature & Certificate Associated with CollabSessionID for Session Record
1904
Derive "Historical" Hash Value from Digital Signature
1906
1908
1910
Does Historical Hash Value = Current Hash Value?
Notify Collaboration Services Component of Error/Mis-match
1912
>1 Session Identified
End

Fig. 19

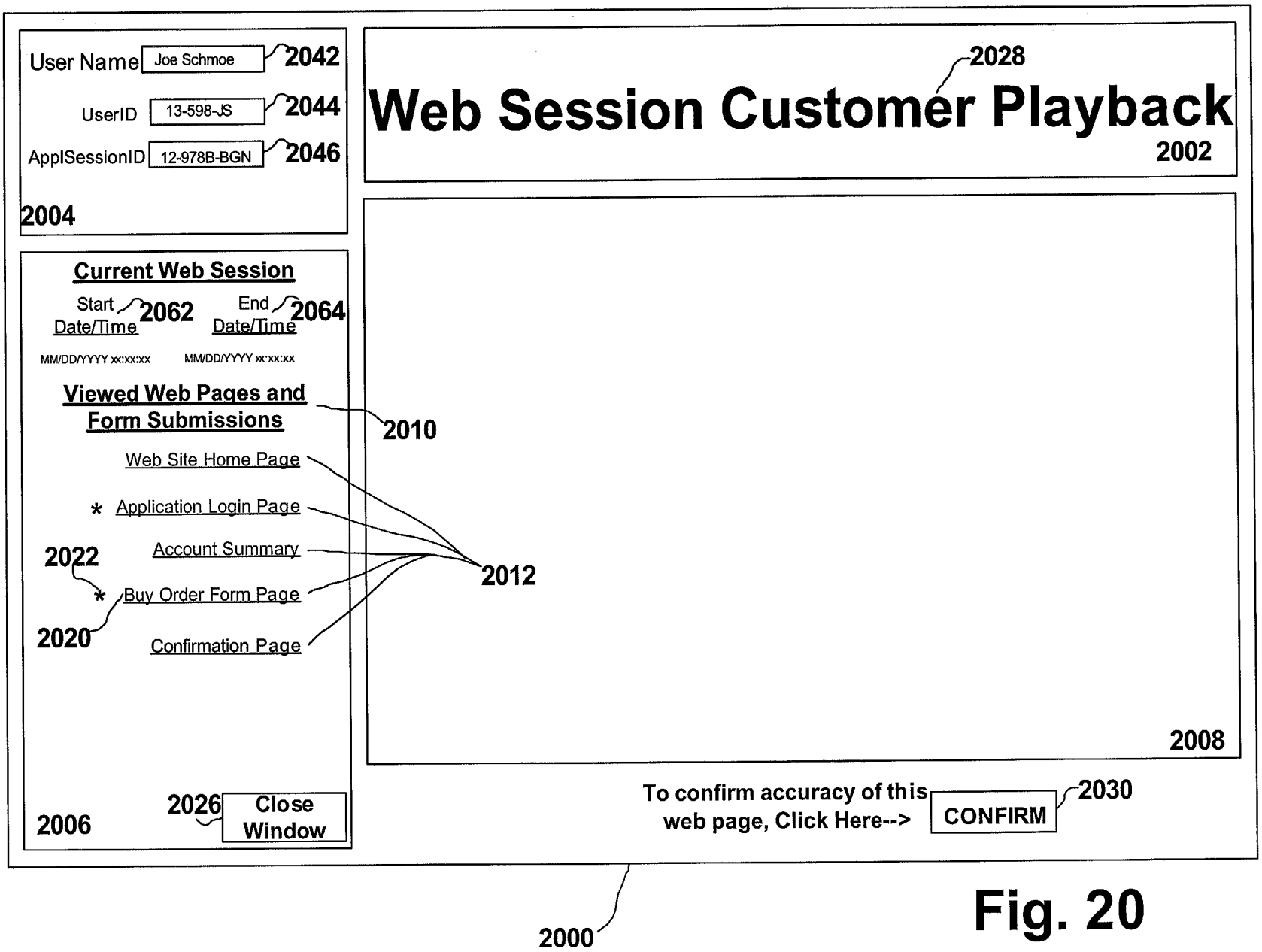

User Name
Joe Schmoe
2042
UserID
13-598-JS
2044
ApplSessionID
12-978B-BGN
2046
2004
Current Web Session
Start Date/Time
2062
End Date/Time
2064
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx:xx
Viewed Web Pages and Form Submissions
2010
Web Site Home Page
* Application Login Page
Account Summary
2022
* Buy Order Form Page
2020
Confirmation Page
2012
2006
2026
Close Window
Web Session Customer Playback
2028
2002
2008
To confirm accuracy of this web page, Click Here-->
CONFIRM
2030
2000

Fig. 20

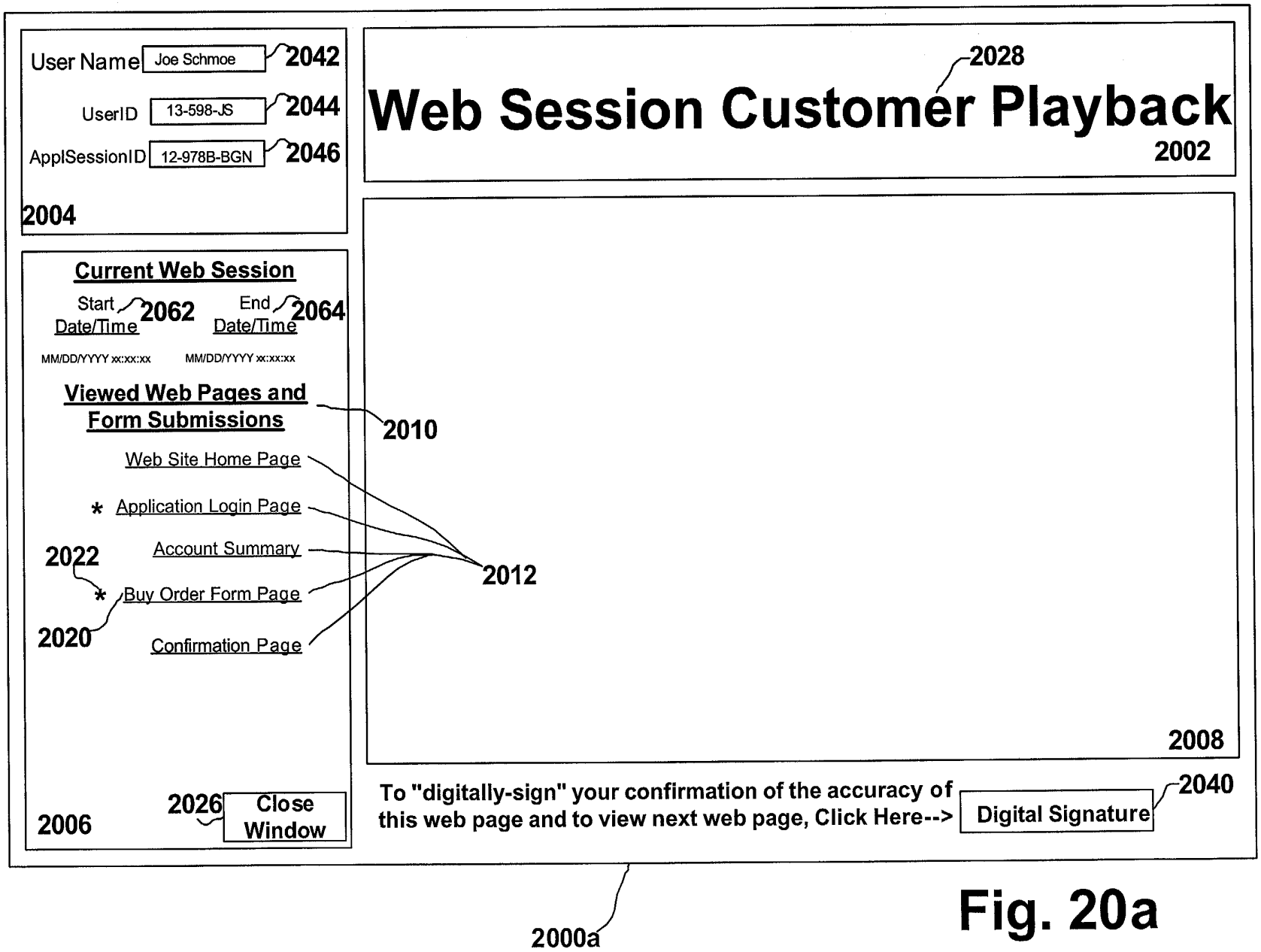

User Name
Joe Schmoe
2042
UserID
13-598-JS
2044
ApplSessionID
12-978B-BGN
2046
2004
Web Session Customer Playback
2028
2002
Current Web Session
Start Date/Time
2062
End Date/Time
2064
MM/DD/YYYY xx:xx:xx
MM/DD/YYYY xx:xx:xx
Viewed Web Pages and Form Submissions
2010
Web Site Home Page
* Application Login Page
Account Summary
2022
* Buy Order Form Page
2020
Confirmation Page
2012
2008
2006
2026
Close Window
To "digitally-sign" your confirmation of the accuracy of this web page and to view next web page, Click Here-->
Digital Signature
2040
2000a

Fig. 20a

TOSCTF 2393Q0QT

Fig. 21

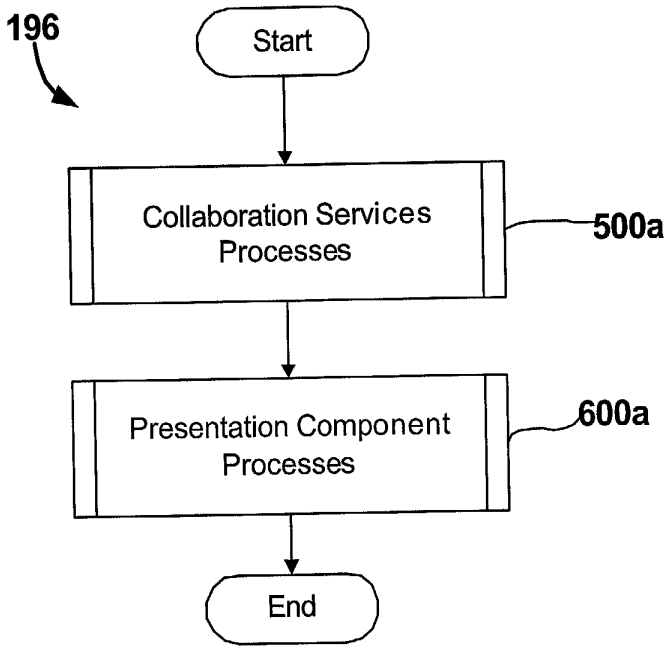
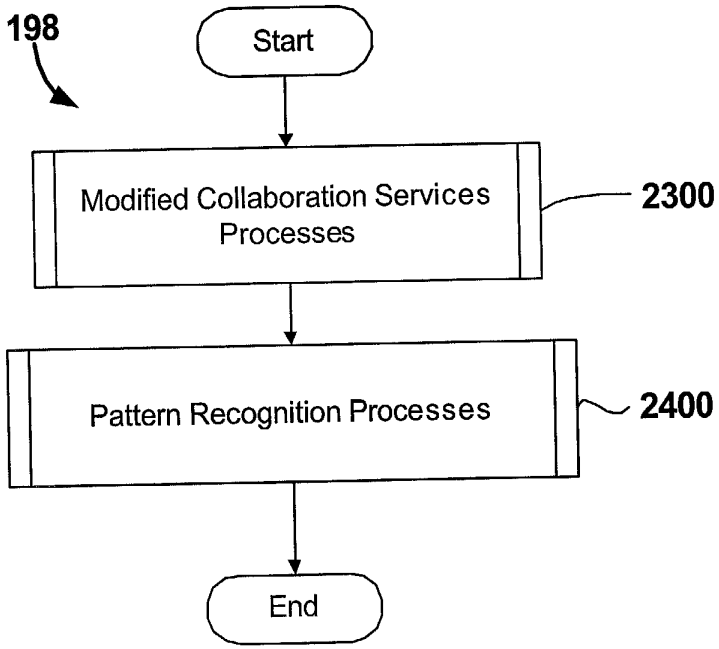


Fig. 22



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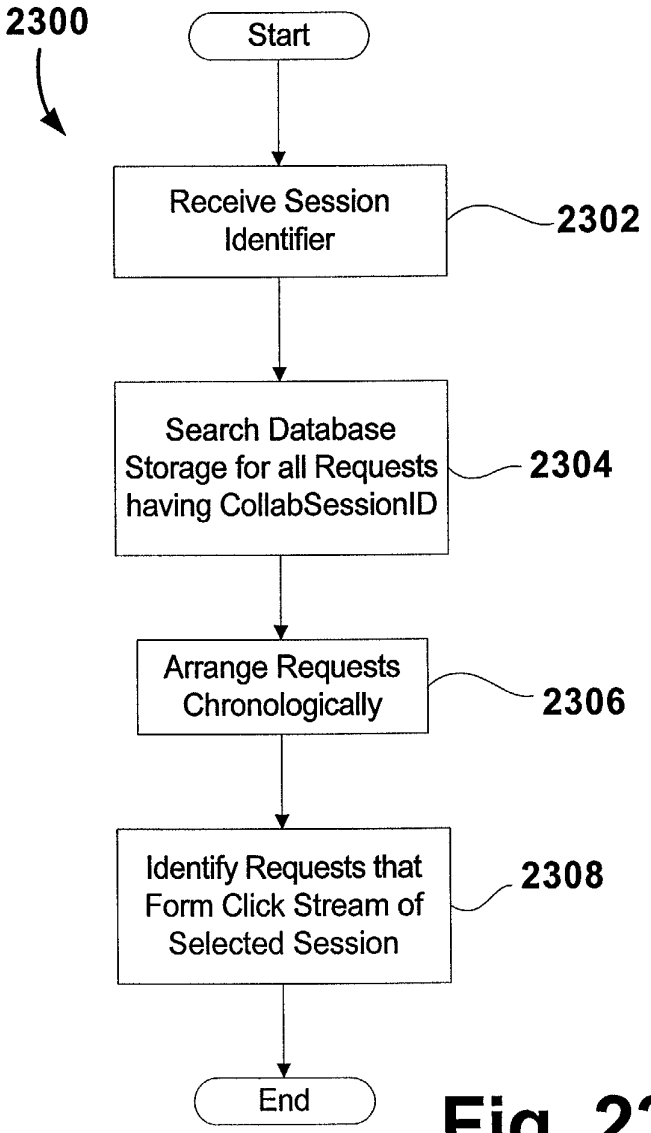

Fig. 23

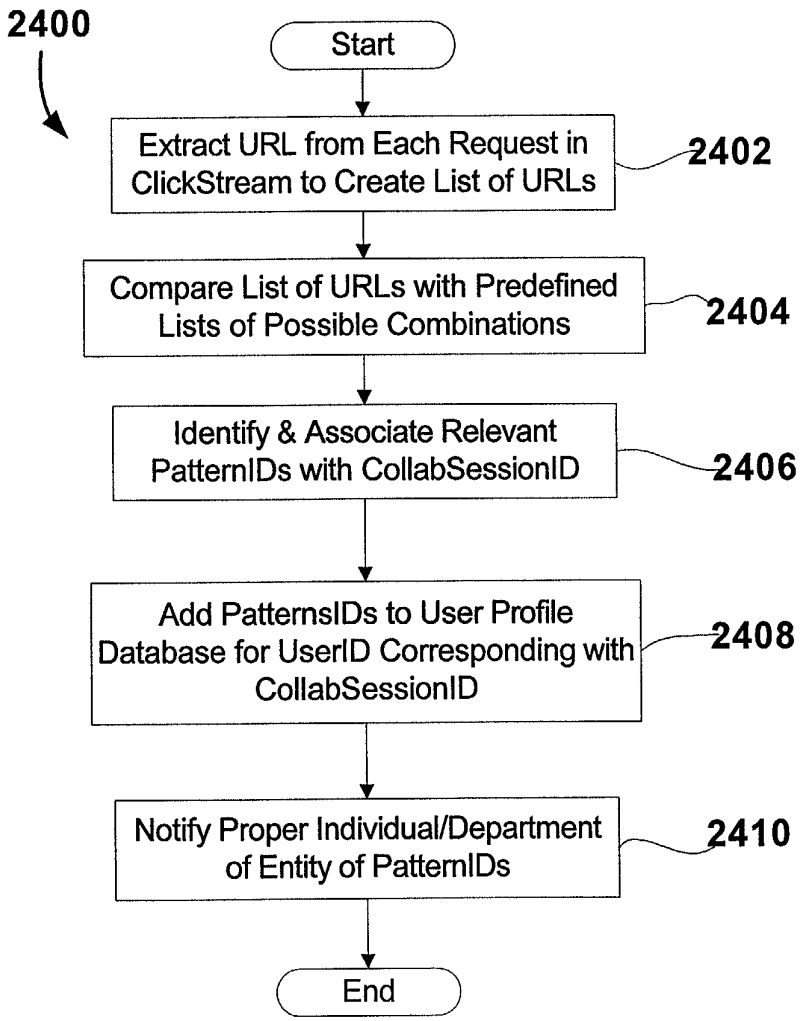

Fig. 24